Lizard King

Based on:
EHX Lizard Queen Octave Fuzz

Number of parts:
Low, total 31 components

Enclosure type:
125b

Effect type:
Electro-Harmonix octave fuzz

Technology:
NPN and PNP transistors

Get your board at:
Lizard King

Build difficult:
Easy

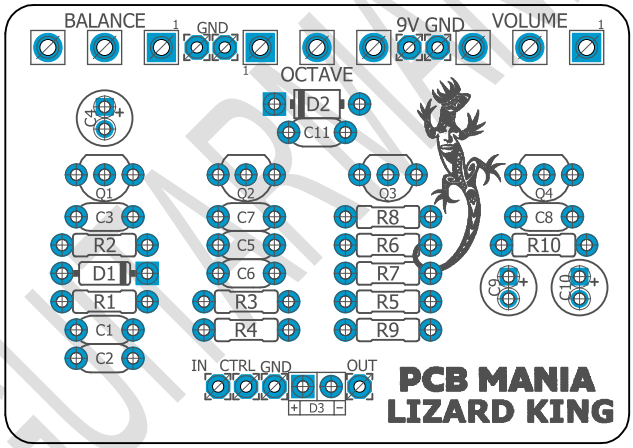
Power consumption:
9V

Get your kit at:
Das Musikding (Europe)

Project overview:

Inspired by the Lizard Queen, the best attempt ever to recreate the vintage Electro-Harmonix octave fuzz.

Made in collaboration between Electro-Harmonix, JHS, and acclaimed artist/illustrator Daniel Danger, this is a fire-breather of an octave fuzz pedal straight out of EHX's early '70s golden age.



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Introduction

The Lizard King boasts a fully adjustable analog octave-up effect, allowing you to achieve a range of sounds from a subtle clang to a wild vintage-octave frenzy.

Instead of a conventional tone control, the Balance knob offers two distinct sonic voices on opposite ends, serving as a combined tone/gain control and providing access to a wide variety of heavily distorted sounds to explore. The pedal incorporates a fixed-level fuzz circuit meticulously optimized for delivering a powerful wall-of-sound experience.

The final result stands as a superb octave fuzz pedal, earning its esteemed position among the Electro-Harmonix pedal collection.

Controls

Potentiometers

- Balance
- Octave
- Volume

Bill of materials

Resistors	
Part	**Value**
R1	1m
R2	100k
R3	1m
R4	10k
R5	470k
R6	10k
R7	470k
R8	10k
R9	470r
R10	4k7

Capacitors	
Part	**Value**
C1	47p
C2	100n
C3	100n
C5	47p
C6	100n
C7	100n
C8	100n
C11	100n

Electrolytics Capacitors	
Part	**Value**
C4	10u
C9	10u
C10	100u

Potentiometers	
Part	**Value**
BALANCE	1K B
OCTAVE	100K B
VOLUME	100K A

Transistors	
Part	**Value**
Q1	2N2222A
Q2	2N5088
Q3	2N2222A
Q4	2N3906

Diodes	
Part	**Value**
D1	1n4148
D2	1n4148
D3	3mm red LED

Shopping list

Resistors		
Qty	**Value**	**Parts**
1	100k	R2
3	10k	R4, R6, R8
1	1m	R3
1	1m	R1
2	470k	R5, R7
1	470r	R9
1	4k7	R10

Capacitors		
Qty	**Value**	**Parts**
4	100n	C3, C7, C8, C11
2	100n	C2, C6
2	47p	C1, C5

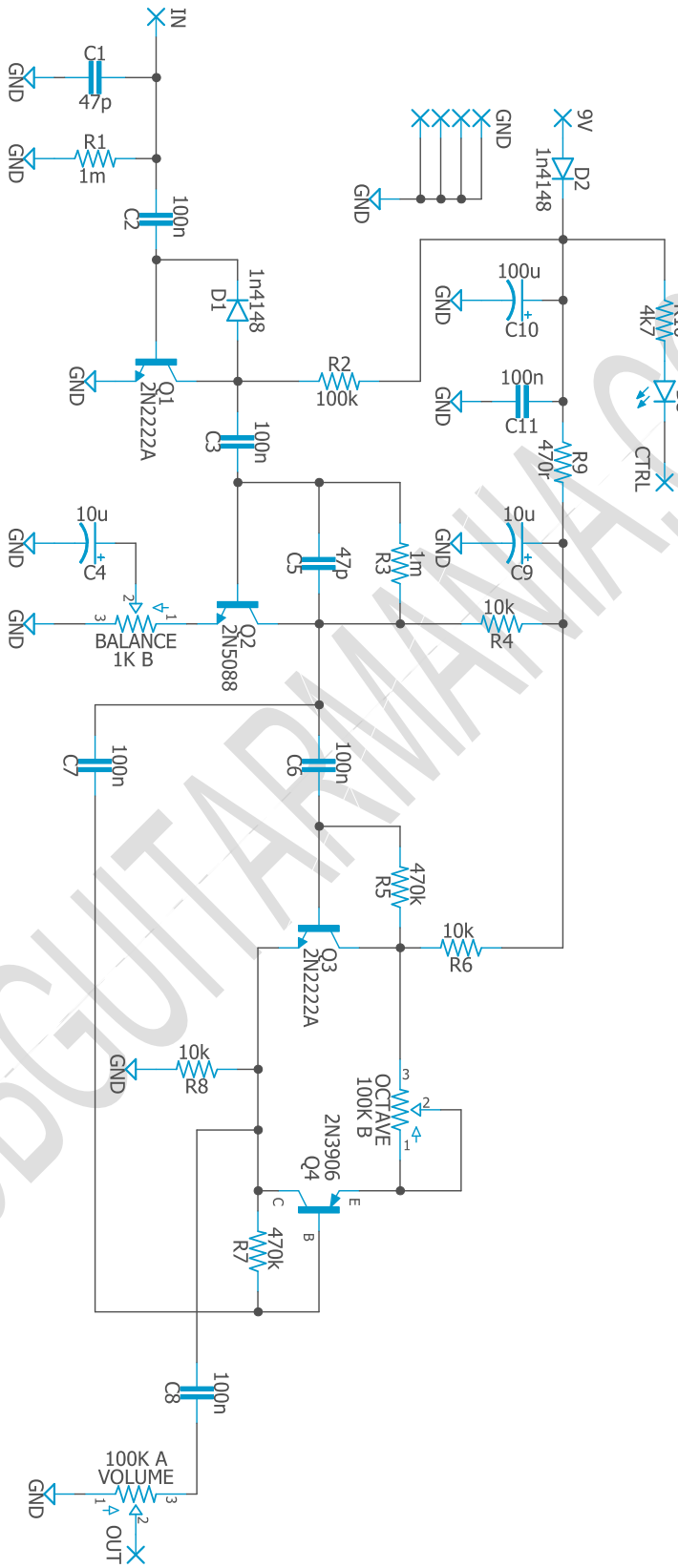
Electrolytics Capacitors		
Qty	**Value**	**Parts**
1	100u	C10
2	10u	C4, C9

Potentiometers		
Qty	**Value**	**Parts**
1	100K A	VOLUME
1	100K B	OCTAVE
1	1K B	BALANCE

Transistors		
Qty	**Value**	**Parts**
2	2N2222A	Q1, Q3
1	2N3906	Q4
1	2N5088	Q2

Diodes		
Qty	**Value**	**Parts**
1	1n4148	D1
1	1n4148	D2
1	3mm red LED	D3

Schematic



Components Recommendations

As many people like to experiment with some pedals with higher voltage, always ensure your **electrolytic capacitors'** max tolerance is over 25v.

This board has been tested using Film box capacitors for most of the values over 1nf and ceramics discs for those under 1nf. However, high-quality components such as Wima's Capacitors and Panasonic's electrolytics can deliver a better performance.

All the resistors used for testing this project are 1/4W Metal Film.

The BOM and Shopping list are exclusive regarding this project. It doesn't include all the hardware like the 3PDT bypass switch, audio/dc jacks, enclosure, etc.

Build Notes

If this is one of your first projects, I recommend you to take a look at our Pedal Building Guide.

For a successful and tidy build, it's recommended the following order:

1. Resistors & diodes
2. Capacitors, starting with the smaller ones and the ceramic ones.
3. Electrolytic capacitors (always check the polarity)
4. Transistors
5. Wires
6. Potentiometers and switches
7. Off-board wiring

Wiring Diagram

All our projects include a free 3PDT Board to make the wiring easier and tidier. Also, all of our PCBs feature the status LED on board.

The pad named "Ctrl" or "LED" is the one that controls the status of the led; wire it to the "LED" pad on the 3PDT board or in the control slug of your 3PDT.

This board has been designed to match our EZ 3PDT PCB; check it here to access our Pedal Wiring Guide.

Drill Template

This Project has been planned to fit into a 125b enclosure type.

Check the Attached “Drilling templates” to drill the box properly. The files are on Scale 1:1, ready to print on an A4 page.

Licensing and Usage

We really appreciate your trust and support in buying this PCB, as well as your will to dive into the DIY electronics world. For us, that's why you can make this project work properly and enjoy not only the building process but also experiment and play with it on your rig.

We try to reply to every question we receive on our email or our social media. Still, we try to encourage all our customers to join our PCB Guitar Mania – Builders Group on Facebook to post all your doubts, issues, suggestions, or requests, share your builds, and have some feedback from other fellow builders and us!

We tested all our projects following this same guide on their standard configurations. Although, not all of the variations and mods have necessarily been checked. These are suggestions based on the schematic analysis and the experiences and opinions of others. Feel free to share with us your views and recommendations regarding the mods your personal experimentation.

These boards may be used for commercial endeavors in any quantity unless expressly noted. No attribution is necessary, though accreditation or a link back is always much appreciated.

If you are a builder planning to make your own run of pedals, we also offer the service of custom-made boards with your brand and logo, design according to your specifications.

The only usage restrictions are that, first, you cannot resell the PCB as part of a kit without prior arrangement with us, and second, you cannot scratch off the silkscreen or other way of trying to hide our logos and the source of the PCBs. Like it's written above, if you want to have your designs with your brand and logo, we could undoubtedly reach an agreement.

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